AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (CURRENTLY AMENDED) A biocompatible microparticle ~~for inhalation~~, comprising at least one active principle and at least one layer coating this active principle, which is an external layer of said microparticle, said external layer containing at least one coating agent, wherein said microparticle has a mean diameter of between 1 μm and 30 μm and an apparent density of between 0.02 g/cm^3 and 0.8 g/cm^3, wherein the active principle/coating agent mass ratio of the particle is between 95/5 and 80/20, and wherein said microparticle is suitable for inhalation by the pulmonary route.

2. (CURRENTLY AMENDED) The microparticle as claimed in claim 1, having a mean diameter of between 1 μm and 15 μm, and an apparent density of between 0.05 g/cm^3 and 0.4 g/cm^3~~, and wherein the active principle/coating agent mass ratio of this particle is between 95/5 and 5/95~~.

3. (PREVIOUSLY PRESENTED) The microparticle as claimed in claim 1, obtained using a method comprising:

- suspending an active principle in a solution of at least one substantially polar coating agent in an organic solvent, wherein said active principle is insoluble in the organic solvent, said substantially polar coating agent is insoluble in a fluid in a supercritical state, and said organic solvent is soluble in a fluid in a supercritical state,

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- bringing the suspension into contact with a fluid in a supercritical state, so as to desolvate in a controlled way the substantially polar coating agent and ensure its coacervation,

- substantially extracting the solvent using a fluid in a supercritical state and discharging the supercritical fluid/solvent mixture, and

- recovering the microparticles.

4. (PREVIOUSLY PRESENTED) The microparticle as claimed in claim 1, obtained by a method comprising:

suspending an active principle in a supercritical fluid containing at least one coating agent dissolved therein, and then in ensuring coacervation of the particles by physicochemical modification of the environment.

5. (PRESENTLY AMENDED) The microparticle as claimed in claim 3, wherein the coating agent is chosen from:

- biodegradable (co)polymers of α-hydroxycarboxylic acids,

- amphiphilic block polymers of a poly(lactic acid)-poly(ethylene oxide) type,

- biocompatible polymers of a poly(ethylene glycol), poly(ethylene oxide) type,

- polyanhydrides, poly(ortho esters), poly-ε-caprolactones, and derivatives thereof,

- poly(β-hydroxybutyrate), poly(hydroxyvalerate), and poly(β-hydroxybutyrate-hydroxyvalerate) copolymers,

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- poly(malic acid),
- polyphosphazenes,
- block copolymers of **[[a]]** poly(ethylene oxide)-poly(propylene oxide) **[[type]]**,
- poly(amino acids),
- polysaccharides,
- phospholipids,
- fatty acid esters, and
- mixtures of the abovementioned compounds.

6. (PREVIOUSLY PRESENTED) The microparticle as claimed in claim 4, wherein the coating agent is chosen from:

- phospholipids,
- mono-, di-, and triglycerides in which the fatty acid chains range from C4 to C22, and mixtures thereof,
- mixtures of glycerides and of esters of polyethylene glycol,
- cholesterol,
- fatty acid esters,
- biodegradable or bioerodible polymers soluble in a supercritical fluid, and
- mixtures thereof.

7. (PREVIOUSLY PRESENTED) The microparticle as claimed in claim 1, wherein the active principle is chosen from proteins, peptides, polysaccharides, anti-

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asthmatic agents, beta-estradiol hormones, testosterone, bronchodilators, cytotoxic agents, corticoids, antigens, and DNA fragments.

8. (CURRENTLY AMENDED) The microparticle as claimed in claim 2, wherein the microparticle is an immediate-release microparticle~~, and wherein the active principle/coating agent mass ratio of this particle is between 95/5 and 80/20~~.

9. (PREVIOUSLY PRESENTED) A method for preparing microparticles for inhalation, comprising:

- suspending an active principle in a solution of at least one substantially polar coating agent in an organic solvent, wherein said active principle is insoluble in the organic solvent, said substantially polar coating agent is insoluble in a fluid in the supercritical state, and said organic solvent is soluble in a fluid in the supercritical state,
- bringing the suspension into contact with a fluid in the supercritical state, so as to desolvate in a controlled way the substantially polar coating agent and ensure its coacervation,
- substantially extracting the solvent using a fluid in the supercritical state, and discharging the SC fluid/solvent mixture, and
- recovering the microparticles.

10. (PREVIOUSLY PRESENTED) A method for preparing microparticles for inhalation, comprising suspending, with stirring, in a closed reactor, an active principle in a supercritical fluid containing at least one coating agent dissolved therein, and then

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in ensuring coacervation of the particles by physicochemical modification of the environment.

11. (PREVIOUSLY PRESENTED) The microparticle according to claim 1, obtained according to a method comprising:

- bringing together a coating agent and an active principle; and
- introducing a supercritical fluid, with stirring, in a closed reactor.

12. (PREVIOUSLY PRESENTED) The microparticle according to claim 2, having a mean diameter of between 2 μm and 10 μm.

13. (PREVIOUSLY PRESENTED) The microparticle according to claim 7, wherein the protein or peptide is chosen from insulin, calcitonin, and analogues of luteinizing hormone-releasing hormone.

14. (PREVIOUSLY PRESENTED) The microparticle according to claim 7, wherein the polysaccharide is heparin.

15. (PREVIOUSLY PRESENTED) The microparticle according to claim 7, wherein the anti-asthmatic agents are chosen from budesonide, beclometasone dipropionate, and beclometasone 17-monopropionate.

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16. (PREVIOUSLY PRESENTED) The microparticle according to claim 7, wherein the bronchodilator is albuterol.

17. (PREVIOUSLY PRESENTED) The microparticle according to claim 5, wherein the biodegradable (co)polymers of α-hydroxycarboxylic acids are selected from homopolymers and copolymers of lactic acid and glycolic acid.

18. (PREVIOUSLY PRESENTED) The microparticle according to claim 17, wherein the biodegradable (co)polymers of α-hydroxycarboxylic acids are selected from poly-L-lactides and poly(lactic-co-glycolic acids).

19. (PREVIOUSLY PRESENTED) The microparticle according to claim 5, wherein the phospholipids are chosen from phosphatidylglycerols, diphosphatidylglycerols containing C12 to C18 fatty acid chains, phosphatidylcholines, diphosphatidylcholines containing C12 to C18 fatty acid chains, diphosphatidylethanolamines containing C12 to C18 fatty acid chains, and diphosphatidylserines containing C12 to C18 chains.

20. (PREVIOUSLY PRESENTED) The microparticle according to claim 19, wherein the diphosphatidylglycerols containing C12 to C18 fatty acid chains are chosen from dilauroylphosphatidylglycerol (DLPG), dimyristoylphosphatidylglycerol (DMPG), dipalmitoylphosphatidylglycerol (DPPG), and distearoylphosphatidylglycerol (DSPG).

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21. (PREVIOUSLY PRESENTED) The microparticle according to claim 19, wherein the diphosphatidylcholines containing C12 to C18 fatty acid chains are chosen from dilauroylphosphatidylcholine (DLPC), dimyristoylphosphatidylcholine (DMPC), dipalmitoylphosphatidylcholine (DPPC), and distearoylphosphatidylcholine (DSPC).

22. (PREVIOUSLY PRESENTED) The microparticle according to claim 19, wherein the diphosphatidylethanolamines containing C12 to C18 fatty acid chains are chosen from dilauroylphosphatidylethanolamine (DLPE), dimyristoylphosphatidylethanolamine (DMPE), dipalmitoylphosphatidylethanolamine (DPPE), and distearoylphosphatidylethanolamine (DSPE).

23. (PREVIOUSLY PRESENTED) The microparticle according to claim 19, wherein the diphosphatidylserine containing C12 to C18 chains are chosen from dilauroylphosphatidylserine (DLPS), dimyristoylphosphatidylserine (DMPS), dipalmitoylphosphatidylserine (DPPS), and distearoylphosphatidylserine (DSPS).

24. (PREVIOUSLY PRESENTED) The microparticle according to claim 5, wherein the fatty acid esters are chosen from glycerylstearate, glyceryllaurate, cetylpalmitate, and mixtures thereof.

25. (PREVIOUSLY PRESENTED) The microparticle according to claim 6, wherein the phospholipids are chosen from phosphatidylglycerols, diphosphatidylglycerols containing C12 to C18 fatty acid chains, phosphatidylcholines,

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diphosphatidylcholines containing C12 to C18 fatty acid chains, diphosphatidylethanolamines containing C12 to C18 fatty acid chains, diphosphatidylserine containing C12 to C18 chains, and mixtures thereof.

26. (PREVIOUSLY PRESENTED) The microparticle according to claim 25, wherein the diphosphatidylglycerols containing C12 to C18 fatty acid chains are chosen from dilauroylphosphatidylglycerol (DLPG), dimyristoylphosphatidylglycerol (DMPG), dipalmitoylphosphatidylglycerol (DPPG), and distearoylphosphatidylglycerol (DSPG).

27. (PREVIOUSLY PRESENTED) The microparticle according to claim 25, wherein the diphosphatidylcholines containing C12 to C18 fatty acid chains are chosen from dilauroylphosphatidylcholine (DLPC), dimyristoylphosphatidylcholine (DMPC), dipalmitoylphosphatidylcholine (DPPC), and distearoylphosphatidylcholine (DSPC).

28. (PREVIOUSLY PRESENTED) The microparticle according to claim 25, wherein the diphosphatidylethanolamines containing C12 to C18 fatty acid chains are chosen from dilauroylphosphatidylethanolamine (DLPE), dimyristoylphosphatidylethanolamine (DMPE), dipalmitoylphosphatidylethanolamine (DPPE), and distearoylphosphatidylethanolamine (DSPE).

29. (PREVIOUSLY PRESENTED) The microparticle according to claim 25, wherein the diphosphatidylserine containing C12 to C18 chains are chosen from

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dilauroylphosphatidylserine (DLPS), dimyristoylphosphatidylserine (DMPS), dipalmitoylphosphatidylserine (DPPS), and distearoylphosphatidylserine (DSPS).

30. (PREVIOUSLY PRESENTED) The microparticle according to claim 6, wherein the fatty acid esters are chosen from glycerylstearate, glyceryllaurate, and cetylpalmitate.

31. (PREVIOUSLY PRESENTED) The microparticle according to claim 7, wherein the peptides are chosen from insulin, calcitonin, and analogues of luteinizing hormone-releasing hormone.

32. (PREVIOUSLY PRESENTED) The microparticle according to claim 7, wherein the polysaccharide is heparin.

33. (PREVIOUSLY PRESENTED) The microparticle according to claim 7, wherein the anti-asthmatic agent is chosen from budesonide, beclometasone dipropionate, and beclometasone 17-monopropionate.

34. (PREVIOUSLY PRESENTED) The microparticle according to claim 7, wherein the bronchodilator is albuterol.

35. (NEW) A microparticle for inhalation prepared according to the method of claim 9.

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36. (NEW) A microparticle for inhalation prepared according to the method of claim 10.

37. (NEW) A biocompatible microparticle, consisting essentially of at least one medical principle for delivery to a host and at least one external layer entirely coating this medical principle, wherein said external layer consists essentially of at least one biodegradable coating agent, for controlled release of the medical principle in the host, wherein the coating agent prevents aggregation of aid microparticles in a composition comprising said microparticles, and wherein said external layer does not contain any medical principle, said microparticle having a mean diameter of between 1 μm and 30 μm and an apparent density of between 0.02 g/cm^3 and 0.8 g/cm^3, and said active principle/coating agent mass ratio of the microparticle is between 95/5 and 80/20, and wherein said microparticle is suitable for inhalation by the pulmonary route for release of the medical principle in the pulmonary tract or in alveolar region of the lungs of the host, such that the bioavailability of the medical principle in the host is at least 80% and in a therapeutic or prophylactic amount.

38. (NEW) A method of administering a therapeutic agent via inhalation by the pulmonary route, comprising:

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providing a biocompatible microparticle according to claim 1, wherein the active principle is a therapeutic agent; and

administering the biocompatible microparticle to a patient in the form of an inhalation aerosol.

39. (NEW) A method of administering a therapeutic agent via inhalation by the pulmonary route, comprising:

providing a biocompatible microparticle according to claim 35, wherein the medical principle is a therapeutic agent; and

administering the biocompatible microparticle to a patient in the form of an inhalation aerosol.

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